

ABSTRACT OF THE DISCLOSURE

Barley α -glucosidase is an important enzyme in the conversion of barley starch to fermentable sugars during the industrial production of ethanol, as in brewing and fuel ethanol production. The enzyme is, however, relatively thermolabile, a disadvantage for an enzyme useful in industrial processes which are preferably conducted at elevated temperatures. Site directed mutagenesis has been conducted to make mutant forms of barley α -glucosidase which have improved thermostability. The sites for this site-directed mutagenesis were selected by sequence comparisons with the sequences of other α -glucosidase proteins which are more thermostable. The recombinant mutant enzymes thus produced have been demonstrated to improve the thermostability of the enzyme.

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